

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Commissioner
 US Department of Commerce
 United States Patent and Trademark
 Office, PCT
 2011 South Clark Place Room
 CP2/5C24
 Arlington, VA 22202
 ETATS-UNIS D'AMERIQUE
 in its capacity as elected Office

Date of mailing (day/month/year) 16 January 2001 (16.01.01)	Applicant's or agent's file reference P57736F
International application No. PCT/GB00/02008	Priority date (day/month/year) 02 June 1999 (02.06.99)
International filing date (day/month/year) 25 May 2000 (25.05.00)	
Applicant VAN ASSELT, Jan, Abraham	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:

09 December 2000 (09.12.00)

☐ in a notice effecting later election filed with the International Bureau on:2. The election ☒ was☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer Pascal Piriou
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference P57736F	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/GB 00/ 02008	International filing date (day/month/year) 25/05/2000	(Earliest) Priority Date (day/month/year) 02/06/1999
Applicant VAN ASSELT, Jan Abram		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of Invention is lacking** (see Box II).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

1

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

P B 00/02008

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 A63B69/00 A63B69/36

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EP0-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	GB 201 645 A (GILBEY-THOMPSON) 30 August 1923 (1923-08-30) the whole document	1-5, 7, 8, 11-13, 20 14, 15, 18, 19
Y A	US 4 944 513 A (ZENTNER) 31 July 1990 (1990-07-31) the whole document	14, 15, 18, 19 1-6, 14-16, 23
X A	US 3 460 391 A (LOMAS) 12 August 1969 (1969-08-12) the whole document	1, 2, 6-9, 12, 14, 20, 24 4, 5, 18, 21, 22



Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

5 September 2000

Date of mailing of the international search report

12/09/2000

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Williams, M

INTERNATIONAL SEARCH REPORT

International Application No

P 00/02008

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GB 169 578 A (GRAY) 27 October 1921 (1921-10-27)	1,2, 10-14, 16,17, 20-22,24
A	the whole document ----	4,5,9
P,X	WO 99 34884 A (VAN ASSELT) 15 July 1999 (1999-07-15) the whole document	1,7,8, 10-17,20
A	US 3 630 521 A (LINGBEEK ET AL.) 28 December 1971 (1971-12-28) cited in the application column 1, line 43 -column 2, line 27; figures 1,2 ----	1,4,5, 10-14,20
A	US 3 754 761 A (PRUSS) 28 August 1973 (1973-08-28) column 1, line 52 -column 2, line 34; figures 1-3 ----	1-5, 12-15,24
A	US 5 762 562 A (TIEDGE) 9 June 1998 (1998-06-09) the whole document ----	1,2,4-6, 12-14, 18,20,24
A	DE 88 04 865 U (SPIER) 26 May 1988 (1988-05-26) ----	
A	GB 115 588 A (PORTE) 6 June 1918 (1918-06-06) -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB 00/02008

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
GB 201645	A		NONE	
US 4944513	A	31-07-1990	AU 5332190 A WO 9010477 A	09-10-1990 20-09-1990
US 3460391	A	12-08-1969	NONE	
GB 169578	A		NONE	
WO 9934884	A	15-07-1999	GB 2332861 A AU 1776599 A	07-07-1999 26-07-1999
US 3630521	A	28-12-1971	NONE	
US 3754761	A	28-08-1973	DE 2117297 A FR 2136224 A GB 1341173 A	12-10-1972 22-12-1972 19-12-1973
US 5762562	A	09-06-1998	DE 19600517 A AU 1378097 A WO 9725113 A EP 0873161 A JP 2875793 B JP 9215805 A	10-07-1997 01-08-1997 17-07-1997 28-10-1998 31-03-1999 19-08-1997
DE 8804865	U	26-05-1988	NONE	
GB 115588	A		NONE	

From the
INTERNATIONAL PRELIMINARY EXAMINING AUTHORITY

RECEIVED

6 SEP 2001

PCT

To:

FRY, Alan Valentine
FRY HEATH & SPENCE
The Old College
53 High Street
Horley, Surrey RH6 7BN
GRANDE BRETAGNE

NOTIFICATION OF TRANSMITTAL OF
THE INTERNATIONAL PRELIMINARY
EXAMINATION REPORT

(PCT Rule 71.1)

Date of mailing
(day/month/year)

04.09.2001

Applicant's or agent's file reference
P57736F

IMPORTANT NOTIFICATION

International application No.
PCT/GB00/02008

International filing date (day/month/year)
25/05/2000

Priority date (day/month/year)
02/06/1999

Applicant

VAN ASSELT, Jan Abraham

1. The applicant is hereby notified that this International Preliminary Examining Authority transmits herewith the international preliminary examination report and its annexes, if any, established on the international application.
2. A copy of the report and its annexes, if any, is being transmitted to the International Bureau for communication to all the elected Offices.
3. Where required by any of the elected Offices, the International Bureau will prepare an English translation of the report (but not of any annexes) and will transmit such translation to those Offices.

4. REMINDER

The applicant must enter the national phase before each elected Office by performing certain acts (filing translations and paying national fees) within 30 months from the priority date (or later in some Offices) (Article 39(1)) (see also the reminder sent by the International Bureau with Form PCT/IB/301).

Where a translation of the international application must be furnished to an elected Office, that translation must contain a translation of any annexes to the international preliminary examination report. It is the applicant's responsibility to prepare and furnish such translation directly to each elected Office concerned.

For further details on the applicable time limits and requirements of the elected Offices, see Volume II of the PCT Applicant's Guide.

Name and mailing address of the IPEA/

 European Patent Office
D-80298 Munich
Tel. +49 89 2399 - 0 Tx: 523656 epmu d
Fax: +49 89 2399 - 4465

Authorized officer

Goenechea Olmos, A

Tel. +49 89 2399-2664




PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference P57736F	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/GB00/02008	International filing date (day/month/year) 25/05/2000	Priority date (day/month/year) 02/06/1999
International Patent Classification (IPC) or national classification and IPC A63B69/00		
Applicant VAN ASSELT, Jan Abraham		
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p><input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of 6 sheets.</p>		
<p>3. This report contains indications relating to the following items:</p> <ul style="list-style-type: none"> I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input checked="" type="checkbox"/> Certain defects in the international application VIII <input checked="" type="checkbox"/> Certain observations on the international application 		
Date of submission of the demand 09/12/2000	Date of completion of this report 04.09.2001	
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized officer Squeri, M Telephone No. +49 89 2399 8417	



INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB00/02008

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):
Description, pages:

1,6,7 as originally filed

2-5 as received on 06/08/2001 with letter of 02/08/2001

Claims, No.:

1-14 as received on 06/08/2001 with letter of 02/08/2001

Drawings, sheets:

1/1 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. PCT/GB00/02008

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)):

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims 1-14
	No: Claims
Inventive step (IS)	Yes: Claims 1-14
	No: Claims
Industrial applicability (IA)	Yes: Claims 1-14
	No: Claims

2. Citations and explanations
see separate sheet

VII. Certain defects in the international application

The following defects in the form or contents of the international application have been noted:
see separate sheet

VIII. Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:
see separate sheet

Reference is made to the following documents (with the numeration adopted at the beginning of the procedure):

D1: GB-A-201645

D6: US-A-3630521; cited in the application

D9: US-A-4138107; cited in the application

SECTION I:

1. The amendments filed with the letter dated 02 August 2001 introduce subject-matter which extends beyond the content of the application as filed, contrary to Article 34.2.b PCT. The amendments concerned are the following:
 - a. Claim 1 and description page 2: "for improving the skill of a sports person" is considered to be more general than the original "for practising the technique of lofting a ball";
 - b. Claim 1 and description page 2: "whose length is equal to or greater than the minimum spacing of the guideways" is not described in the original text and is also not clearly derivable from the drawing.

Consequently, this Report has been established on the new claim 1, filed with the letter of the 02 August 2001, without the amendments a and b (Rule 70.2.c PCT).

SECTION V:

2. Although the examiner has found a minor point of clarity in claim 1 which must be clarified from the applicant (see Point VIII), it has been possible to establish an opinion about novelty, inventive step and industrial applicability by considering the ball coaxial with the reciprocating line (as suggested by the drawing). The following statements are based on this assumption.
3. An apparatus for practising the technique of lofting a ball is known from the document D1. The position of the ball coaxial with the reciprocating line is there not disclosed. Therefore, claim 1 meets the requirements of Article 33.2 PCT.

Documents D6 and D9, are the only documents of the prior art describing a ball coaxial with the reciprocating line but they fail to disclose two upwardly inclined side

by side diverging guideways. Consequently, in the available prior art there is no suggestion that by means of a ball coaxial with the reciprocating line it could be possible to deflect the ball back automatically to the starting position after each struck.

Consequently, claim 1 involves also an inventive step (Article 33.3 PCT).

The subject-matter of claim 1 is industrially applicable as an apparatus for practising the technique of lofting a ball (Article 33.4 PCT).

4. Claims 2-14 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

SECTION VII:

5. Contrary to the requirements of Rule 5.1.a.ii PCT, the relevant background art disclosed in the document D1 is not mentioned in the description, nor is this document identified therein.

SECTION VIII:

6. The term "generally" used in claim 1 leaves the reader in doubt as to the meaning of the technical features to which it refers (i.e. it could also not be coaxial in some cases or it is always substantially coaxial), thereby rendering the definition of the subject-matter of said claims unclear (Article 6 PCT).
7. The embodiment of the invention described on page 3 of the description describing "reciprocating means which comprises more than one line" does not fall within the scope of the claims which are limited to "a reciprocating line". This inconsistency between the claims and the description leads to doubt concerning the matter for which protection is sought, thereby rendering the claims unclear (Article 6 PCT).
8. Claim 9: it is not clear what is meant with "... material comprises as plastics..." (Article 6 PCT).

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



INTERNATIONAL BUREAU OF PATENT COOPERATION
35, rue de la Harpe, CH-1015, Yverdon, Suisse
P.O. Box 6809, CH-1000, Lausanne, Suisse
Patent Cooperation Treaty, 1977

(43) International Publication Date
14 December 2000 (14.12.2000)

PCT

(10) International Publication Number
WO 00/74801 A1

(51) International Patent Classification⁷: A63B 69/00, 69/36

(21) International Application Number: PCT/GB00/02008

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(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
9912763.1 2 June 1999 (02.06.1999) GB

(71) Applicant and

(72) Inventor: VAN ASSELT, Jan, Abraham [GB/GB]; 10
Stangrave Hall, Bletchingley Road, Godstone, Surrey RH9
8NB (GB).

(74) Agents: FRY, Alan, Valentine et al.; Fry Heath & Spence,
The Old College, 53 High Street, Horley, Surrey RH6 7BN
(GB).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

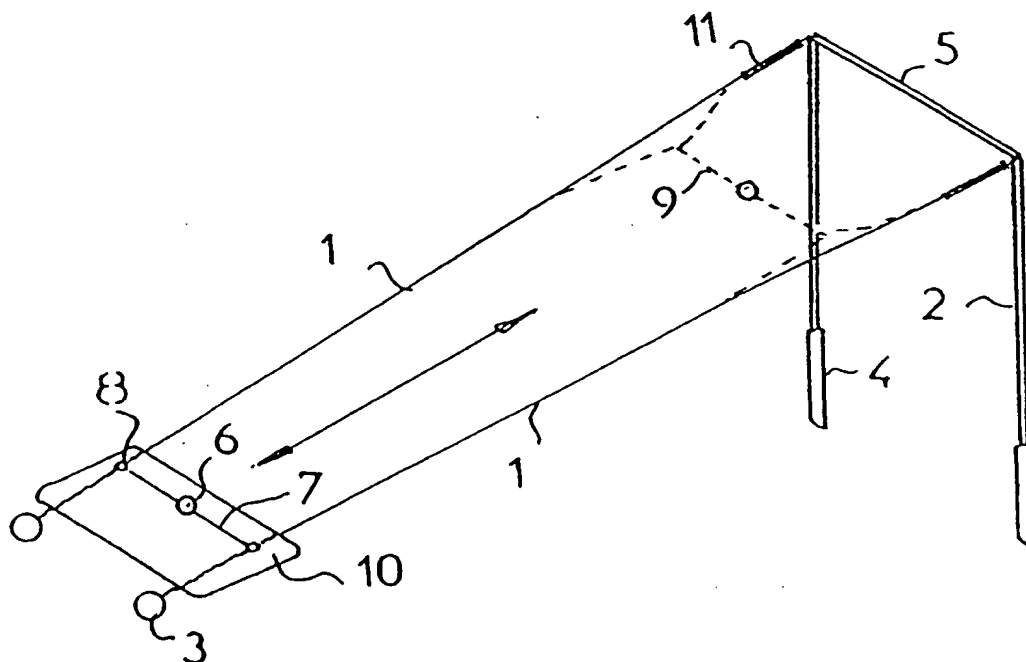
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— With international search report.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: BALL GAME APPARATUS



(57) Abstract: Apparatus for practising the technique of lofting a ball comprises a support frame containing two upright supports linked by a horizontal cross-bar. Two inclined guideways extend between ground anchors and the supports. A substantially inelastic reciprocating means is connected to and freely movable along the guideways and a ball connected to said reciprocating means.

WO 00/74801 A1

1/12/00

BALL GAME APPARATUS

This invention relates to apparatus for use in practising the sport of golf or cricket and/or any other ball game which involves lofting a ball or like projectile (hereinafter referred to as a "ball") forwardly into the air. More especially, but not exclusively, the invention relates to apparatus for improving the skills of participants in such sports.

In the field of competitive sport it is a well known adage that practice makes perfect. Thus, for example, golf players spend many hours improving, *inter alia*, their golf swing.

In other ball game sports there are several inanimate trainers available, these including, *inter alia*, a ball attached by an elasticated strand, string or rope to some form of central support. Such trainers are unsatisfactory because the ball approaches the player at an unrealistic angle and speed. Furthermore, *missing* the ball results in the elasticated strand, string or rope becoming inconveniently entangled around the support.

Children also enjoy ball games, but unless they are coached, they have even less opportunity of improving their skills. Furthermore, few children have sufficient space and freedom from houses and cars to play ball games unrestrictedly.

US-A-4,138,107 relates to a ball game practice device which comprises a ball connected to an elastic tether, the tether connected at either end to a carriage member which runs along a rigid rail. It is the elastic nature of the tether which after full stretch, returns the ball to the player.

US-A-3,630,521 relates to a baseball batting practice device. Once again, a ball is connected to an elastic cord which is slidably linked to an upper and lower support wire. In both these disclosures, the elastic nature of the tether to the ball allows somewhat uncontrolled lateral movement of the ball once struck by the player.

Thus, there is a need to provide apparatus for simulating a golf or cricket swing or the like, to be used in a controlled manner in relatively small areas without concern over surrounding buildings and cars.

The present invention sets out to provide such apparatus.

Accordingly, in one aspect the invention provides apparatus to practise the technique of lofting a ball, comprising two inclined guideways, substantially inelastic reciprocating means connected to and freely movable along said guideways, and a ball connected to said reciprocating means.

The term "substantially inelastic" as used herein applies to materials which have a very limited ability to stretch and change length when struck.

One end of each of the two guideways is typically secured or securable at substantially ground level, for example, to the ground via an anchor comprising, for example a stake or ground pin, or to a stable support. The other end of each of the two guideways is typically attached to a stable support. In particular, the stable support may be a wall, frame or a pole.

The length of the guideways and/or their angle of inclination above ground level may be varied in order to vary the type and/or difficulty of swing or stroke required. For example, if a user would like to simulate a drive swing, the guideways may be kept long and their angle of inclination low. For practising more lofted shots, the angle of inclination of the guideways may be increased.

Typically, the distance separating the two guideways increases as the height of the guideways increases above ground level. Accordingly, the guideways may be substantially adjacent at their lowest point level but diverge towards their highest point. The maximum distance separating the two guideways may be greater than the length of the reciprocating means.

Preferably, the supports are linked, for example by a rigid support bar, thereby

ensuring that the guideways are maintained at a predetermined distance apart.

In this arrangement, when the reciprocating means is positioned at, or towards, the lower end of the guideways, a player may strike the ball and propel the reciprocating means forwardly and upwardly along the guideways. However, when the length of the reciprocating means becomes limiting in relation to the distance separating the two guideways, the reciprocating means decelerates, stops and is deflected back along the guideways towards the player.

In an alternative arrangement, the two guideways are substantially parallel.

Importantly, the reciprocating means is made from a substantially inelastic material. Not only does this ensure that the ball maintains a controlled trajectory regardless of the angle at which the player hits the ball, but the relative inelasticity of the reciprocating means ensures its length becomes limiting in relation to the distance between the two guideways thereby deflecting the ball back to the player.

The reciprocating means may comprise a substantially inelastic substantially horizontal line connected or connectable to both guideways.

The invention also contemplates an embodiment wherein the reciprocating means comprises more than one substantially inelastic substantially horizontal line, for example, wherein the reciprocating means comprises one substantially inelastic substantially horizontal line connected to one guideway and another associated substantially inelastic substantially horizontal line connected to the other guideway.

The reciprocating means may be connected or connectable to the guideways through a slide which may comprise a hinged clip, ring, rope slide or adjustable loop.

In one embodiment one or both guideways and/or the reciprocating means are made of a low friction material such as plastics covered cord or wire. The guideways and the reciprocating means may be made of the same material.

Tensioning means may be provided for varying the tension of each guideway. This may comprise a reel connected to the respective anchor or support.

The invention also contemplates an embodiment wherein one or both guideways are made of a substantially rigid material. By substantially rigid it is meant relatively inflexible. Therefore, one or both guideways may take the form of a plastics track which is capable of receiving a runner to which the reciprocating means is connected.

The ball may be connected at any point along the reciprocating means.

The ball may be, for example, a cricket ball or a golf ball, or a simulated cricket or golf ball.

The guideways may be kept within retaining means when not in use. For example, the retaining means may take the form of a coil or spool around which the guideways may be wound. The retaining means may comprise an automatic reeling mechanism for the guideways. In such an embodiment, the user would unwind a length of each guideway, and secure each guideway by one end to a base, e.g. to the ground, to ensure that the automatic reeling mechanism does not rewind the guideways.

In one embodiment, the supports and/or the guideways and/or the retaining means may be attached or attachable to each other.

In another aspect, the invention provides apparatus for practising the technique of lofting a ball, comprising a ball suspended by a substantially inelastic substantially horizontal line connected or connectable to two inclined guideways.

In yet another aspect, the invention provides apparatus for practising the technique of lofting a ball, comprising a support frame containing two substantially vertical supports and a substantially rigid substantially horizontal cross-bar linking each support, two inclined guideways, one end of each guideway linked to a support, substantially inelastic reciprocating means connected to and freely movable along said guideways, and a ball connected to said reciprocating means.

In still another aspect, the invention provides apparatus for practising the technique of lofting a ball, comprising a support frame containing two upright supports and a substantially rigid substantially horizontal cross-bar linking the supports, two guideways, one end of each guideway linked to a support, each guideway retained or retainable in retaining means, substantially inelastic reciprocating means connected or connectable to and freely movable along said guideways, and a ball connected to said reciprocating means.

The upright supports may be positioned substantially vertically.

The retaining means may comprise an automatic reeling mechanism for the guideway.

The height and positioning of the lower ends of the guideways may be adjustable.

The guideways lie in a plane which is generally inclined thereto. One or each guideway may take the form of a string, rope or the like stretchable between two spaced supports. The line may be coated with or formed from a material having relatively low friction properties, for example a plastics material.

The substantially inelastic substantially horizontal line(s) may be connected to one and/or both guideways by a slide in the form of, for example, a loop or ring.

The apparatus may also comprise a backboard or target at which the user of the apparatus may aim when hitting the ball. The target may be placed at any position remote from of the lower end of the guideways.

The apparatus may also comprise buffering and/or deflecting means at any position along the guideways to return the reciprocating means back to the user after the ball is struck. The backboard or target may also act as a buffering and/or deflecting means.

The invention will now be described by way of example only with reference to the following diagrammatic drawing in which the sole Figure is a side view in perspective of apparatus in accordance with the invention.

The apparatus shown in the drawing takes the form of a golf training aid, especially for one player. The apparatus comprises two guideways 1, of plastics coated cord which are attached at their ends to supports 2 and anchorages 3, typically spaced approximately 10-12 metres apart. Typically, the heights of the supports 2 above ground level are two metres. The supports 2 are held in position by ground engaging metal supports 4. The height of each support is adjustable. A rigid support pole 5 maintains the tops of the supports 2 at a predetermined distance apart. The support pole 5 may be positioned at a lower height relative to the supports 2 if required. The guideways are fixed at ground level by anchorages in the form of ground pegs 3. A ball 6 is suspended by a substantially inelastic line 7 from the guideways. Each end of the line 7 is linked to the guideways by a loop or ring 8. The line 7 may be secured to the ball by stitching, stapling or any other means. In an alternative arrangement, two inelastic lines are used, one linking one side of the ball to one guideway, the other linking the other side of the ball to the other guideway.

When the training aid is in use, a player stands near the lowermost end of the guideways 1 at their point of connection to the ground pegs 3 and strikes the ball 6 with a golf club. The starting positions of the ball 6 and line 7 are shown in full line in the drawing. The force of the strike sends the line 7 and the ball 6 along the guideways 1 towards the limiting position shown in broken line 9. Once the distance between the ends of the line 7 becomes limiting in relation to the distance between the guideways, the line 7 slows down, stops and is deflected back along the guideways under gravity to return to the player who can then strike the ball again.

Winding and retaining means 11 may be included on either or both guideways to store the guideways 1 when not in use.

Whilst the apparatus is in use, the player may stand on a teeing-off mat 10 which may be made of any suitable material. Hence, the apparatus may be used on any surface, for example, grass, sand or concrete, and the user can still simulate conditions of play.

It will be appreciated that the foregoing is merely exemplary of embodiments of the invention and that modifications can readily be made without departing from the scope of the invention as set out in the appended claims. Thus, the supports 2 may be replaced by

a frame comprising a pair of interconnected tripods to which the upper ends of the guideways are secured. A target or rebound board may be supported between the tripods in the path of trajectory of the ball.

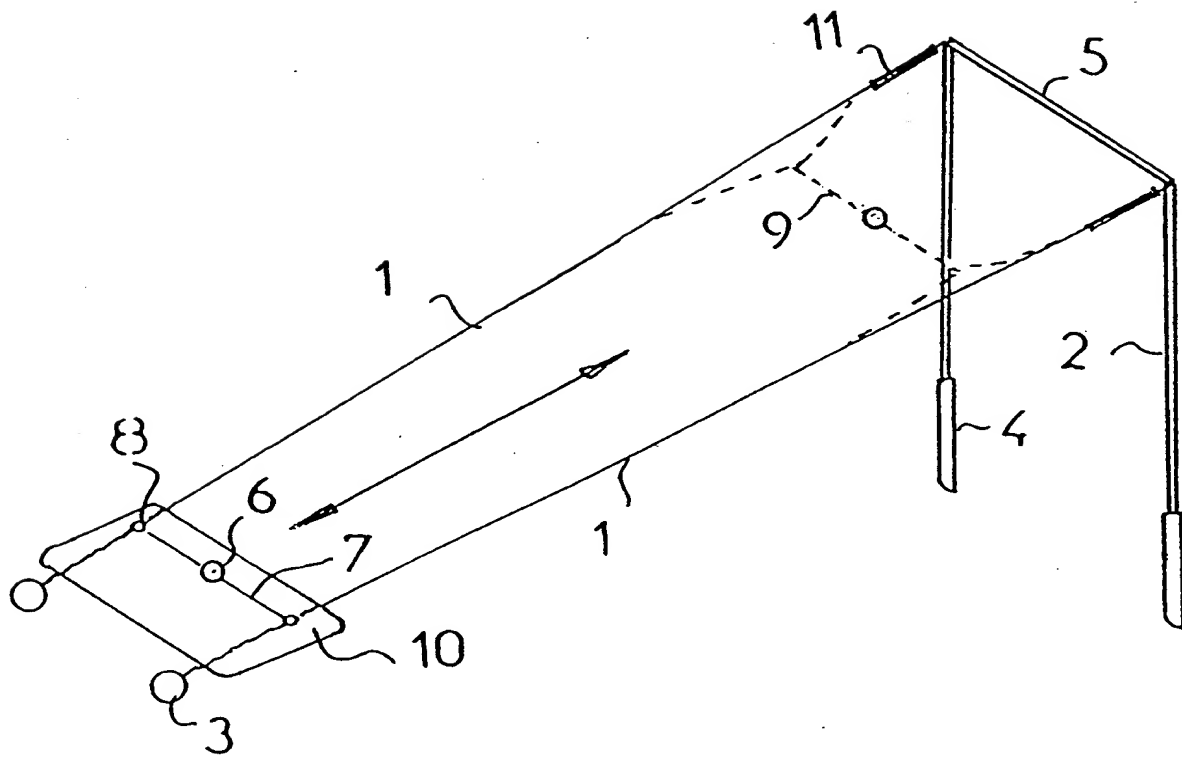
CLAIMS

1. Apparatus for practising the technique of lofting a ball, the apparatus comprising two inclined guideways, substantially inelastic reciprocating means connected to and freely movable along said guideways, and a ball connected to said reciprocating means.
2. Apparatus as claimed in claim 1 wherein one end of each of the two guideways is secured or securable at ground level by an anchorage 3.
3. Apparatus as claimed in claim 2 wherein the anchorage comprises a stake or ground pin.
4. Apparatus as claimed in claim 3 wherein the other end of each of the two guideways is attached to a stable support.
5. Apparatus as claimed in claim 4 wherein the stable support comprises a pole or tripod.
6. Apparatus as claimed in any one of the preceding claims where means are provided for varying the length of the guideways and/or their angle of inclination above ground level.
7. Apparatus as claimed in any one of the preceding claims wherein the distance separating the two guideways increases as the height of the guideways increases above ground level.
8. Apparatus as claimed in claim 7 wherein the maximum distance separating the two guideways is greater than the length of the reciprocating means.
9. Apparatus as claimed in any one of claims 4 to 8 wherein the supports are linked by a rigid support bar.

10. Apparatus as claimed in any one of claims 1 to 6 wherein the two guideways are substantially parallel.
11. Apparatus as claimed in any one of the preceding claims wherein the reciprocating means comprises a substantially inelastic substantially horizontal line connected or connectable to both guideways.
12. Apparatus as claimed in any one of the preceding claims wherein the reciprocating means may be connected or connectable to the guideways through a slide.
13. Apparatus as claimed in claim 12 wherein the slide comprises a hinged clip, ring, rope slide or adjustable loop.
14. Apparatus as claimed in any one of the preceding claims wherein one or both guideways and/or the reciprocating means are made of a low friction material.
15. Apparatus as claimed in claim 14 wherein the material comprises as plastics covered cord or wire.
16. Apparatus as claimed in any one of claims 1 to 14 wherein one or both guideways are made of a substantially rigid material.
17. Apparatus as claimed in claim 16 wherein one or both guideways takes the form of a plastics track which is capable of receiving a runner to which the reciprocating means is connected.
18. Apparatus as claimed in any one of claims 1 to 15 further comprising tensioning means for varying the tension of the or each guideway.
19. Apparatus as claimed in claim 18 wherein the tensions means comprises a reeling mechanism.
20. Apparatus for practising the technique of lofting a ball, comprising a ball

suspended by a substantially inelastic substantially horizontal line connected or connectable to two inclined guideways.

21. Apparatus for practising the technique of lofting a ball, comprising a support frame containing two substantially vertical supports and a substantially rigid substantially horizontal cross-bar linking each support, two inclined guideways, one end of each guideway linked to a support, substantially inelastic reciprocating means connected to and freely movable along said guideways, and a ball connected to said reciprocating means.
22. Apparatus for practising the technique of lofting a ball, comprising a support frame containing two upright supports and a substantially rigid substantially horizontal cross-bar linking the supports, two guideways, one end of each guideway linked to a support, each guideway retained or retainable in retaining means, substantially inelastic reciprocating means connected or connectable to and freely movable along said guideways, and a ball connected to said reciprocating means.
23. Apparatus as claimed in claim 22 wherein the retaining means comprises an automatic reeling mechanism for the guideways.
24. Apparatus as claimed in any one of the preceding claims further comprising a backboard or target at which the user of the apparatus may aim when hitting the ball.



PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving office use only

International Application No.

International Filing Date

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) **P57736F**

Box No. I TITLE OF INVENTION

BALL GAME APPARATUS

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

VAN ASSELT, Jan Abram
10 Stangrave Hall
Bletchingley Road
Godstone
Surrey RH9 8NB
GB

☒ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (that is, country) of nationality: **GB**

State (that is, country) of residence: **GB**

This person is applicant for the purposes of: ☒ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)

This person is:

☐ applicant only

☐ applicant and inventor

☐ inventor only (If this check-box is marked, do not fill in below.)

State (that is, country) of nationality:

State (that is, country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent ☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

FRY, Alan Valentine
Fry Heath & Spence
The Old College
53 High Street
Horley
Surrey RH6 7BN, GB

Telephone No.

+44 1293 776880

Facsimile No.

+44 1293 776837

Teleprinter No.

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Box No.V DESIGNATION OF STATE

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☒ **AP ARIPO Patent:** GH Ghana, GM Gambia, KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SL Sierra Leone, SZ Swaziland, TZ United Republic of Tanzania, UG Uganda, ZW Zimbabwe, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☒ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakhstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, CY Cyprus, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☒ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Côte d'Ivoire, CM Cameroon, GA Gabon, GN Guinea, GW Guinea-Bissau, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|---|---|
| <input checked="" type="checkbox"/> AE United Arab Emirates | <input checked="" type="checkbox"/> LR Liberia |
| <input checked="" type="checkbox"/> AL Albania | <input checked="" type="checkbox"/> LS Lesotho |
| <input checked="" type="checkbox"/> AM Armenia | <input checked="" type="checkbox"/> LT Lithuania |
| <input checked="" type="checkbox"/> AT Austria | <input checked="" type="checkbox"/> LU Luxembourg |
| <input checked="" type="checkbox"/> AU Australia | <input checked="" type="checkbox"/> LV Latvia |
| <input checked="" type="checkbox"/> AZ Azerbaijan | <input checked="" type="checkbox"/> MA Morocco |
| <input checked="" type="checkbox"/> BA Bosnia and Herzegovina | <input checked="" type="checkbox"/> MD Republic of Moldova |
| <input checked="" type="checkbox"/> BB Barbados | <input checked="" type="checkbox"/> MG Madagascar |
| <input checked="" type="checkbox"/> BG Bulgaria | <input checked="" type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input checked="" type="checkbox"/> BR Brazil | <input checked="" type="checkbox"/> MN Mongolia |
| <input checked="" type="checkbox"/> BY Belarus | <input checked="" type="checkbox"/> MW Malawi |
| <input checked="" type="checkbox"/> CA Canada | <input checked="" type="checkbox"/> MX Mexico |
| <input checked="" type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input checked="" type="checkbox"/> NO Norway |
| <input checked="" type="checkbox"/> CN China | <input checked="" type="checkbox"/> NZ New Zealand |
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| <input checked="" type="checkbox"/> CU Cuba | <input checked="" type="checkbox"/> PT Portugal |
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| <input checked="" type="checkbox"/> DE Germany | <input checked="" type="checkbox"/> RU Russian Federation |
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| <input checked="" type="checkbox"/> DM Dominica | <input checked="" type="checkbox"/> SE Sweden |
| <input checked="" type="checkbox"/> EE Estonia | <input checked="" type="checkbox"/> SG Singapore |
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| <input checked="" type="checkbox"/> FI Finland | <input checked="" type="checkbox"/> SK Slovakia |
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| <input checked="" type="checkbox"/> GE Georgia | <input checked="" type="checkbox"/> TM Turkmenistan |
| <input checked="" type="checkbox"/> GH Ghana | <input checked="" type="checkbox"/> TR Turkey |
| <input checked="" type="checkbox"/> GM Gambia | <input checked="" type="checkbox"/> TT Trinidad and Tobago |
| <input checked="" type="checkbox"/> HR Croatia | <input checked="" type="checkbox"/> TZ United Republic of Tanzania |
| <input checked="" type="checkbox"/> HU Hungary | <input checked="" type="checkbox"/> UA Ukraine |
| <input checked="" type="checkbox"/> ID Indonesia | <input checked="" type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> IL Israel | <input checked="" type="checkbox"/> US United States of America |
| <input checked="" type="checkbox"/> IN India | <input checked="" type="checkbox"/> UZ Uzbekistan |
| <input checked="" type="checkbox"/> IS Iceland | <input checked="" type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> YU Yugoslavia |
| <input checked="" type="checkbox"/> KE Kenya | <input checked="" type="checkbox"/> ZA South Africa |
| <input checked="" type="checkbox"/> KG Kyrgyzstan | <input checked="" type="checkbox"/> ZW Zimbabwe |
| <input checked="" type="checkbox"/> KP Democratic People's Republic of Korea | |
| <input checked="" type="checkbox"/> KR Republic of Korea | |
| <input checked="" type="checkbox"/> KZ Kazakhstan | |
| <input checked="" type="checkbox"/> LC Saint Lucia | |
| <input checked="" type="checkbox"/> LK Sri Lanka | |

Check-boxes reserved for designating States which have become party to the PCT after issuance of this sheet:

- ☒ **DZ** Algeria
- ☒ **AG** Antigua and Barbuda
- ☒ **MZ** Mozambique

Precautionary Designation Statement: In addition to the designations made above, the applicant also makes under Rule 4.9(b) all other designations which would be permitted under the PCT except any designation(s) indicated in the Supplemental Box as being excluded from the scope of this statement. The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation (including fees) must reach the receiving Office within the 15-month time limit.)

Supplemental Box If the Supplemental Box is not used, this sheet should not be included in the request.

1. If, in any of the Boxes, the space is insufficient to furnish all the information: in such case, write "Continuation of Box No. ..." [indicate the number of the Box] and furnish the information in the same manner as required according to the captions of the Box in which the space was insufficient, in particular:

- (i) If more than two persons are involved as applicants and/or inventors and no "continuation sheet" is available: in such case, write "Continuation of Box No. III" and indicate for each additional person the same type of information as required in Box No. III. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below;
 - (ii) if, in Box No. II or in any of the sub-boxes of Box No. III, the indication "the States indicated in the Supplemental Box" is checked: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the applicant(s) involved and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is applicant;
 - (iii) if, in Box No. II or in any of the sub-boxes of Box No. III, the inventor or the inventor/applicant is not inventor for the purposes of all designated States or for the purposes of the United States of America: in such case, write "Continuation of Box No. II" or "Continuation of Box No. III" or "Continuation of Boxes No. II and No. III" (as the case may be), indicate the name of the inventor(s) and, next to (each) such name, the State(s) (and/or, where applicable, ARIPO, Eurasian, European or OAPI patent) for the purposes of which the named person is inventor;
 - (iv) if, in addition to the agent(s) indicated in Box No. IV, there are further agents: in such case, write "Continuation of Box No. IV" and indicate for each further agent the same type of information as required in Box No. IV;
 - (v) if, in Box No. V, the name of any State (or OAPI) is accompanied by the indication "patent of addition," or "certificate of addition," or if, in Box No. V, the name of the United States of America is accompanied by an indication "continuation" or "continuation-in-part": in such case, write "Continuation of Box No. V" and the name of each State involved (or OAPI), and after the name of each such State (or OAPI), the number of the parent title or parent application and the date of grant of the parent title or filing of the parent application;
 - (vi) if, in Box No. VI, there are more than three earlier applications whose priority is claimed: in such case, write "Continuation of Box No. VI" and indicate for each additional earlier application the same type of information as required in Box No. VI;
 - (vii) if, in Box No. VI, the earlier application is an ARIPO application: in such case, write "Continuation of Box No. VI", specify the number of the item corresponding to that earlier application and indicate at least one country party to the Paris Convention for the Protection of Industrial Property or one Member of the World Trade Organization for which that earlier application was filed.
2. If, with regard to the precautionary designation statement contained in Box No. V, the applicant wishes to exclude any State(s) from the scope of that statement: in such case, write "Designation(s) excluded from precautionary designation statement" and indicate the name or two-letter code of each State so excluded.
3. If the applicant claims, in respect of any designated Office, the benefits of provisions of the national law concerning non-prejudicial disclosures or exceptions to lack of novelty: in such case, write "Statement concerning non-prejudicial disclosures or exceptions to lack of novelty" and furnish that statement below.

Continuation of Box No. IV

HUTCHINS, Michael Richard; SPENCE, Anne; DOWNING, Michael Phillip;
PRICE, Vincent Andrew; UNWIN, Stephen Geoffrey; MADDISON, Victoria
 Jayne; WHITE, Martin Paul; all of Fry Heath & Spence, The Old College,
 53 High Street, HORLEY, Surrey RH6 7BN, GB.

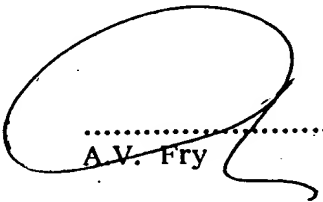
Box No. VI PRIORITY CLAIM		<input type="checkbox"/> Further priority claims are indicated in the Supplemental Box.		
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country	regional application: regional Office	international application: receiving Office
item (1) 02 June 1999 (02.06.1999)	9912763.1	GB		
item (2)				
item (3)				

☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): (1)

* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY			
Choice of International Searching Authority (ISA) (if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):	Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority):		
ISA /	Date (day/month/year)	Number	Country (or regional Office)

Box No. VIII CHECK LIST; LANGUAGE OF FILING	
This international application contains the following number of sheets: request : 4 description (excluding sequence listing part) : 7 claims : 3 abstract : 1 drawings : 1 sequence listing part of description : Total number of sheets : 16	This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify):
Figure of the drawings which should accompany the abstract: 1	Language of filing of the international application: English

Box No. IX SIGNATURE OF APPLICANT OR AGENT	
<small>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</small>	
 A.V. Fry	

For receiving Office use only		2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received:
1. Date of actual receipt of the purported international application:		
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:		
4. Date of timely receipt of the required corrections under PCT Article 11(2):		
5. International Searching Authority (if two or more are competent): ISA /	6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid.	

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